

REMARKS

Claims 1-29 are pending. The Examiner has made the restriction requirement final. Therefore, Claims 1-3, 5, 7, 9-10, 12, 14-17, 19, 21-25, 27 and 29 are currently under examination on the merits. Claims 4, 6, 11, 13, 18, 20, 26 and 28 have been withdrawn from consideration as directed to non-elected subject matter. Claims 1, 14, 21-22 and 29 have been rejected under 35 U.S.C. § 112, first paragraph, as allegedly lacking enabling support. Claim 1 has been rejected under 35 U.S.C. 102(b) as allegedly anticipated by Ford et al., (U.S. Patent No. 5,635,202) or Velraeds et al. (*App Env Microbio* 62(6): 1958-63, June 1996). Claims 1, 3, 5, 7, 10, 12, 14, 17, 19, 21-22, 25, 27 and 29 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 5,645,830 to Reid et al. Claims 1, 3, 5, 7, 10, 12, 14, 17, 19, 21-22, 25, 27 and 29 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Reid et al. (*Clin. Micro. Rev.* 335-44, 1990). Claims 1, 3, 5, 7, 10, 12, 14, 17, 19, 21-22, 25, 27 and 29 have been rejected under the judicially created doctrine of obviousness-type double patenting as allegedly over Claims 1-17 of U.S. Patent No. 6,479,051.

In response, Applicants have canceled Claims 4, 6, 11, 13, 18, 20, 26 and 28, without prejudice. Applicants reserve the right to file a divisional application to pursue the subject matter of Claims 4, 6, 11, 13, 18, 20, 26 and 28.

Claims 1, 14, 21-22 and 29 have been rejected under 35 U.S.C. § 112, first paragraph, as allegedly lacking enabling support. Specifically, the Examiner alleges that the specification does not enable one skilled in the art to use the invention, because the specification does not provide evidence that the biological materials essential to the present invention are (1) known and readily available to the public and (2) reproducible from the written description. More specifically, the Examiner states that it is unclear as to whether two specific *Lactobacillus*

strains (*L. fermentum* RC-14 and *L. rhamnosus* GR-1) are known and publicly available, or can be reproducibly isolated without undue experimentation. The Examiner acknowledges that the present invention provides an ATCC deposit number of *L. rhamnosus* GR-1. However, the Examiner alleges that there is no ATCC deposit number of *L. fermentum* RC-14 provided. The Examiner also indicates that Applicants' referral to the deposit in the specification is an insufficient assurance that the required deposit has been made and that all the conditions of 37 C.F.R. §§1.801-1.809 are met. Moreover, the Examiner indicates that Applicants have not provided assurances that the specific bacterial strains cited in the claims will become publicly available upon issuance of the patent. In addition, the Examiner requires evidence of a deposit of the two specific strains.

In the first instance, Applicants respectfully submit that contrary to the Examiner's allegation, the specification at page 7, lines 17-18 clearly provides that *L. fermentum* RC-14 strain has a ATCC deposit number of 55845. Applicants also submit herewith copies of *L. fermentum* RC-14 and *L. rhamnosus* GR-1 ATCC deposit receipts.

Applicants further submit that all restrictions on availability of said *L. fermentum* RC-14 and *L. rhamnosus* GR-1 strains to the public will be irrevocably removed upon the granting of the patent based upon the captioned application and said strains will remain permanently available for a term of at least 5 years after the most recent request for the furnishing of a sample, and in any case, for a period of at least 30 years after the date of deposit or for the enforceable life of the U.S. patent whichever is longer. In the event that the strains become non-viable or are inadvertently destroyed, such will be replaced with viable strains of the same taxonomic description.

In view of the foregoing, it is respectfully submitted that the rejection of Claims 1, 14, 21-22 and 29 under 35 U.S.C. §112, first paragraph, is overcome. Withdrawal of the rejection is therefore respectfully requested.

Claim 1 has been rejected under 35 U.S.C. 102(b) as allegedly anticipated by Ford et al., (U.S. Patent No. 5,635,202) or Velraeds et al. (*App Env Microbio* 62(6): 1958-63, June 1996). The Examiner alleges that both references teach application of *lactobacillus* for the colonization of the urogenital tract to prevent and treat colonization of uropathogenic flora.

Applicants observe that Ford et al. merely teach a method of intra-vaginally administering *Lactobacillus* to treat vaginal yeast infections. Nowhere do Ford et al. disclose a method of orally administering one or more probiotic organism, e.g., *lactobacillus*, to treat bacterial vaginal infections, as presently claimed in Claim 1.

Velraeds et al. merely disclose an *in vitro* experiment which demonstrates that certain *lactobacillus* isolates can inhibit the initial adhesion of uropathogenic *Enterococcus faecalis* strain. Nowhere does Velraeds et al. disclose a method of orally administering one or more probiotic organism, e.g., *lactobacillus*, to treat bacterial vaginal infections, as presently claimed in Claim 1.

Therefore, the rejection of Claim 1 under 35 U.S.C. 102(b) is overcome and withdrawal thereof is respectfully requested.

Claims 1, 3, 5, 7, 10, 12, 14, 17, 19, 21-22, 25, 27 and 29 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 5,645,830 to Reid et al. Specifically, the Examiner by referring to Claim 8 of the '830 patent, alleges that the '830 patent discloses the species of the present invention and thus anticipates the instant application.

Applicants observe that Claim 8 of the '830 patent depends on Claim 6, which recites, in pertinent part, a method of prevention of recurrent urogenital infection by administering skim milk powder and one or more *Lactobacillus* strains to one suffering such infection. Claim 8 delineates the strains employed in Claim 6. However, Applicants also observe that the '830 patent limits the administration of the skim milk and *Lactobacillus* in vaginal suppositories. See, col. 3, lines 13-21 and Claim 10 of the '830 patent. Nowhere does the '830 patent teach oral delivery of probiotic organisms, treating bacterial vaginosis, or reducing candida colonization, as claimed by the present invention. Moreover, skim milk (in some cases with an antibiotic) is a component of the '830 patent. In contrast, neither skim milk nor antibiotic is necessary in the present invention. Indeed, the present invention, for the first time, provides that oral intake of *Lactobacillus* can successfully deliver probiotic therapy to women in need thereof. Thus, Applicants respectfully submit that the present application is not anticipated by the '830 patent.

Therefore, the rejection of Claims 1, 3, 5, 7, 10, 12, 14, 17, 19, 21-22, 25, 27 and 29 under 35 U.S.C. 102(b) is overcome and withdrawal thereof is respectfully requested.

Claims 1, 3, 5, 7, 10, 12, 14, 17, 19, 21-22, 25, 27 and 29 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Reid et al. (*Clin. Micro. Rev.* 335-44, 1990). Specifically, the Examiner alleges that Reid et al., on pages 339-40, teach using *Lactobacillus*, such as *L. rhamnosus* GR-1, for the treatment and prevention of a variety of urogenital infections.

Applicants observe that Reid et al. do not disclose that *Lactobacillus* can be administered orally to treat vaginal infection, as claimed by the present invention. In fact, on the page cited by the Examiner (p. 339), Reid et al. clearly teach that *L. casei* GR-1 was implanted

directly into the urinary bladder in postmenopausal patients, i.e., *Lactobacillus* was administered intravesicularly. Applicants also observe that Reid et al. on page 340 refer to the study of Tolino et al. Tolino et al. teach that auxiliary (in addition to standard therapy) oral administration of *L. acidophilus* reduced bacterial and mycotic vaginal infections associated with inflammation. However, Applicants respectfully submit that Tolino et al. merely use *lactobacilli* as a food adjunct, not as a direct agent designed to cure the disease. In addition, Tolino et al. require that the therapy had to be applied topically as well as adjunctive to oral use. Applicants respectfully submit that one skilled in the art would interpret Tolino et al. as teaching that oral *lactobacilli* therapy alone could not successfully be used to treat vaginal infections, such as bacterial vaginosis. Thus, Applicants respectfully submit that Reid et al. do not anticipate the present invention.

Therefore, the rejection of Claims 1, 3, 5, 7, 10, 12, 14, 17, 19, 21-22, 25, 27 and 29 under 35 U.S.C. 102(b) is overcome and withdrawal thereof is respectfully requested.

Claims 1, 3, 5, 7, 10, 12, 14, 17, 19, 21-22, 25, 27 and 29 have been rejected under the judicially created doctrine of obviousness-type double patenting as allegedly over Claims 1-17 of U.S. Patent No. 6,479,051. The Examiner admits that Claims 1, 3, 5, 7, 10, 12, 14, 17, 19, 21-22, 25, 27 and 29 of the present invention and Claims 1-17 of the '051 patent are not identical. The Examiner also acknowledges that the '051 patent is directed to methods that establish a healthy urogenital flora while the present invention is directed to methods that improve vaginal health. However, the Examiner alleges that claims of the present invention and those of the '051 patent are not patentably distinct from each other.

Applicants respectfully submit that a method that can improve vaginal health throughout life is a different method from, and thereby patentably distinguishable from, a

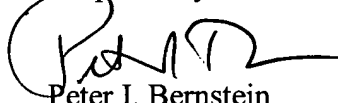
method that can establish a healthy urogenital flora, even if similar or same conditions may be employed in both methods. However, in an effort to favorably advance the prosecution, Applicants have amended Claim 1.

Claim 1, as amended, does not recite "improving Claims vaginal health throughout life." Claim 1 also specifies the application of claimed method to a woman having a bacterial vaginal infection. Support can be found throughout the specification, in Example 3 starting at page 28, Table 4 on page 29 and original Claims 8, 15 and 23, for example. Thus, Applicants respectfully submit that Claims 1, 3, 5, 7, 10, 12, 14, 17, 19, 21-22, 25, 27 and 29 are clearly patentably distinct from Claims 1-17 of the '051 patent.

Therefore, the rejection of Claims 1, 3, 5, 7, 10, 12, 14, 17, 19, 21-22, 25, 27 and 29 under the judicially created doctrine of obviousness-type double patenting over Claims 1-17 of U.S. Patent No. 6,479,051 is overcome. Withdrawal of the rejection is respectfully requested.

In view of the above, it is respectfully submitted that this application is in condition for allowance which action is earnestly solicited.

Respectfully submitted,



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BUDAPEST TREATY ON THE INTERNATIONAL RECOGNITION OF
THE DEPOSIT OF MICROORGANISMS FOR THE PURPOSES OF PATENT PROCEDURE

INTERNATIONAL FORM

RECEIPT IN THE CASE OF AN ORIGINAL DEPOSIT ISSUED PURSUANT TO RULE 7.3
AND VIABILITY STATEMENT ISSUED PURSUANT TO RULE 10.2



To: (Name and Address of Depositor or Attorney)

Lawson Research Institute
Attn: Dr. Gregor Reid
268 Gorsvanor Street
London, Ontario N6A 4V2
CANADA

Deposited on Behalf of: Research Corporation Technologies

Identification Reference by Depositor:

ATCC Designation

Lactobacillus casei RC-38
L. gasserii 60
L. acidophilus RC-14

55841
55844
55845

The deposits were accompanied by: ___ a scientific description ☒ a proposed taxonomic description indicated above.

The deposits were received October 11, 1996 by this International Depository Authority and have been accepted.

AT YOUR REQUEST: ☒ We will inform you of requests for the strains for 30 years.

The strains will be made available if a patent office signatory to the Budapest Treaty certifies one's right to receive, or if a U.S. Patent is issued citing the strains, and ATCC is instructed by the United States Patent & Trademark Office or the depositor to release said strains.

If the cultures should die or be destroyed during the effective term of the deposit, it shall be your responsibility to replace them with living cultures of the same.

The strains will be maintained for a period of at least 30 years from date of deposit, or five years after the most recent request for a sample, whichever is longer. The United States and many other countries are signatory to the Budapest Treaty.

The viability of the cultures cited above was tested October 17, 1996. On that date, the cultures were viable.

International Depository Authority: American Type Culture Collection, Rockville, Md. 20852 USA

Signature of person having authority to represent ATCC:

Barbara M. Hailey
Barbara M. Hailey, Administrator, Patent Depository

Date: October 25, 1996

cc: Dr. Frank DiGiglio (Docket 9421)



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BUDAPEST TREATY ON THE INTERNATIONAL RECOGNITION OF THE DEPOSIT OF MICROORGANISMS FOR THE PURPOSES OF PATENT PROCEDURE

INTERNATIONAL FORM

RECEIPT IN THE CASE OF AN ORIGINAL DEPOSIT ISSUED PURSUANT TO RULE 7.3
AND VIABILITY STATEMENT ISSUED PURSUANT TO RULE 10.2

To: (Name and Address of Depositor or Attorney)

Dr. Gregor Reid
Lawson Research Institute
268 Grosvenor Street
London, Ontario, Canada N6A 4B2

Deposited on Behalf of: Research Corporation Technologies, Tucson, AZ

Identification Reference by Depositor: ATCC Designation

<i>Lactobacillus casei</i> var <i>rhamnosus</i> , RC-17	55825
<i>L. casei</i> var <i>rhamnosus</i> , GR-1	55826

The deposits were accompanied by: ☐ a scientific description ☒ a proposed taxonomic description indicated above.

The deposits were received September 27, 1996 by this International Depository Authority and have been accepted.

AT YOUR REQUEST:

☒ We will inform you of requests for the strains for 30 years.

The strains will be made available if a patent office signatory to the Budapest Treaty certifies one's right to receive, or if a U.S. Patent is issued citing the strains, and ATCC is instructed by the United States Patent & Trademark Office or the depositor to release said strain.


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The strains will be maintained for a period of at least 30 years after the date of deposit, and for a period of at least five years after the most recent request for a sample. The United States and many other countries are signatory to the Budapest Treaty.

The viability of the cultures cited above was tested October 3, 1996. On that date, the cultures were viable.

International Depository Authority: American Type Culture Collection, Rockville, Md. 20852 USA

Signature of person having authority to represent ATCC:


Barbara M. Halley, Administrator, ATCC Patent Depository

Date: October 3, 1996

cc: Dr. Frank DiGiglio (Docket 9421)